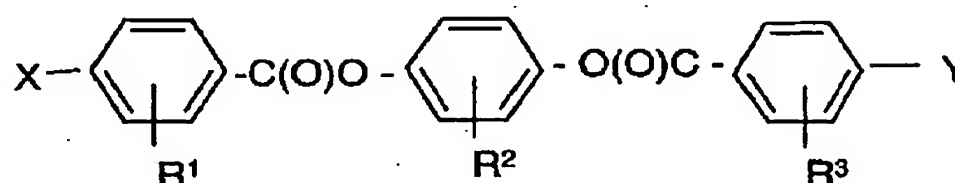


**Amendments to the Claims:**

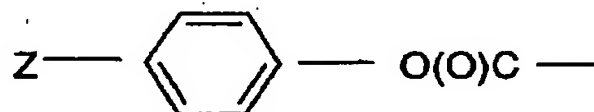
This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1-173. (Canceled).

1 174. (New) Mesogens having the following formula:



2  
3 wherein X and Y are spacer groups optionally further consisting essentially of terminal  
4 functionalities, polymerizable groups, or combinations thereof, one or more of X  
5 or Y having the following general structure:



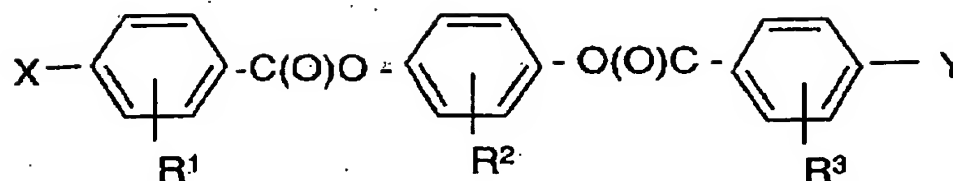
6  
7 wherein Z is spacer group optionally further consisting essentially of terminal  
8 functionalities, polymerizable groups, and combinations thereof;

9 R<sup>2</sup> is selected from the group consisting of alkyl groups having from about 1 to 6 carbon  
10 atoms and aryl groups; and

11 R<sup>1</sup> and R<sup>3</sup> are selected from groups less bulky than R<sup>2</sup>.

1 175. (New) The mesogens of claim 174 wherein said terminal functionalities  
2 are independently selected from the group consisting of hydroxyl groups, amino groups  
3 and sulfhydryl groups.

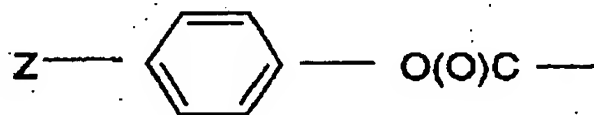
1 176. (New) Mesogens having the following formula:



2

3 wherein

4 X and Y independently are selected from the group consisting of amino groups,  
 5 polymerizable groups having polymerizable unsaturated carbon-carbon bond, and  
 6 combinations thereof, and groups having the following structure:



7

8 wherein Z is selected from the group consisting of amino groups, polymerizable  
 9 groups having polymerizable unsaturated carbon-carbon bond, and combinations  
 10 thereof;

11 provided that when either X or Y is polymerizable group, the other of X or Y is amino  
 12 group and, when both X and Y are amino group, one or more of X or Y further  
 13 consists essentially of spacer group selected from the group consisting of H-  
 14  $(\text{CH}_2)_n\text{-O-}$  groups,  $\text{Cl}(\text{CH}_2)_n\text{-O-}$  groups,  $\text{Br}(\text{CH}_2)_n\text{-O-}$  groups,  $\text{I}(\text{CH}_2)_n\text{-O-}$ , wherein  
 15 n is from about 2 to about 12 wherein the  $\text{CH}_2$  groups independently are  
 16 optionally substituted by oxygen, sulfur, or an ester group; provided that at least 2  
 17 carbon atoms separate said oxygen or said ester group; and,  
 18  $\text{R}^2$  is selected from the group consisting of alkyl groups having from about 1 to 6 carbon  
 19 atoms and aryl groups.

1 177. (New) The mesogens of claim 176 wherein one or more of X, Y, or Z is  
 2 polymerizable group selected from the group consisting of acryloyloxy alkoxy groups

3 and methacryloyloxy alkoxy groups having an alkyl moiety having from 2 to 12 carbon  
4 atoms.

1 178. (New) The mesogens of claim 177 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 12 carbon atoms wherein CH<sub>2</sub> groups optionally are  
3 substituted by groups selected from the group consisting of oxygen, sulfur, and ester  
4 groups; provided that two or more carbon atoms separate said oxygen from said ester  
5 groups.

1 179. (New) The mesogens of claim 178 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 9 carbon atoms.

1 180. (New) The mesogens of claim 178 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 6 carbon atoms.

1 181. (New) The mesogens of claim 176 wherein R<sup>2</sup> is selected from the group  
2 consisting of t-butyl groups, isopropyl groups, secondary butyl groups, and phenyl  
3 groups.

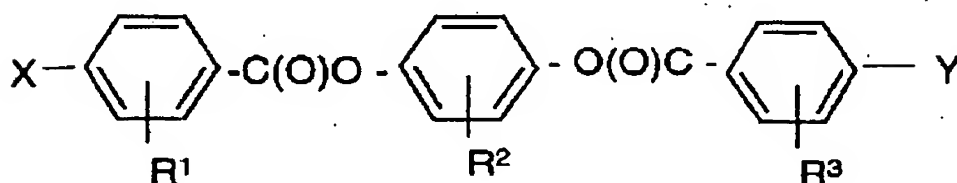
1 182. (New) The mesogens of claim 178 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.

1 183. (New) The mesogens of claim 181 wherein R and R<sup>3</sup> are selected from  
2 the group consisting of hydrogen and a methyl group.

1 184. (New) The mesogens of claim 176 wherein one or more of X, Y, or Z  
2 further consists essentially of spacer group.

1 185. (New) The mesogens of claim 184 wherein one or more of X, Y, or Z  
2 further consists essentially of functionalities independently selected from the group  
3 consisting of hydroxyl groups and sulfhydryl groups.

1 186. (New) Mesogens having the following formula:



2  
3 wherein

4 X and Y independently are selected from the group consisting of amino groups,  
5 polymerizable groups, and combinations thereof, provided that when X is  
6 polymerizable group, Y is amino group;

7  $\text{R}^2$  is selected from the group consisting of t-butyl groups, isopropyl groups, and  
8 secondary butyl groups; and

9  $\text{R}^1$  and  $\text{R}^3$  are selected from groups less bulky than  $\text{R}^2$ .

1 187. (New) The mesogens of claim 186 wherein said polymerizable groups  
2 have polymerizable unsaturated carbon-carbon bond.

1 188. (New) The mesogens of claim 186 wherein said polymerizable groups are  
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy  
3 alkoxy groups having alkyl moiety with from 2 to 12 carbon atoms.

1 189. (New) The mesogens of claim 188 wherein said alkyl moiety consists  
2 essentially of from 2 to 12 carbon atoms and  $\text{CH}_2$  groups optionally are substituted by  
3 groups selected from the group consisting of oxygen, sulfur, and ester groups; provided  
4 that two or more carbon atoms separate said oxygen from said ester groups.

1 190. (New) The mesogens of claim 189 wherein said alkyl moiety consists

2 essentially of a total of from 2 to 9 carbon atoms.

1 191. (New) The mesogens of claim 189 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 6 carbon atoms.

1 192. (New) The mesogens of claim 186 wherein R and R<sup>3</sup> are selected from  
2 the group consisting of hydrogen and a methyl group.

1 193. (New) The mesogens of claim 191 wherein R and R<sup>3</sup> are selected from  
2 the group consisting of hydrogen and a methyl group.

1 194. (New) The mesogens of claim 186 wherein one or more member selected  
2 from the group consisting of X and Y further consists essentially of spacer group.

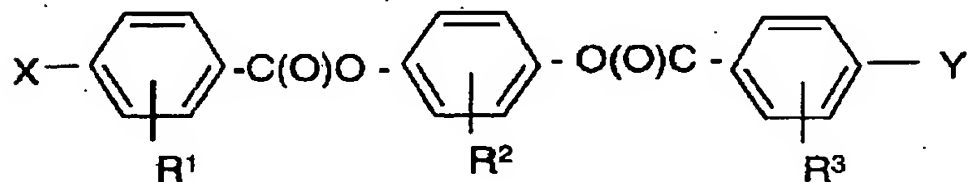
1 195. (New) The mesogens of claim 187 wherein one or more member selected  
2 from the group consisting of X and Y further consists essentially of spacer group.

1 196. (New) The mesogens of claim 186 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1 197. (New) The mesogens of claim 194 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1 198. (New) The mesogens of claim 195 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1 199. (New) Mesogens having the following formula:



2  
3 wherein

4 X is polymerizable group comprising polymerizable unsaturated carbon-carbon bond;

5 Y comprises amino group;

6  $R^2$  is selected from the group consisting of alkyl groups having from about 1 to 6 carbon  
7 atoms and aryl groups; and

8  $R^1$  and  $R^3$  are selected from groups less bulky than  $R^2$ .

1 200. (New) The mesogens of claim 199 wherein said polymerizable group is  
2 selected from the group consisting of acryloyloxy alkoxy groups and methacryloyloxy  
3 alkoxy groups having alkyl moiety with from 2 to 12 carbon atoms.

1 201. (New) The mesogens of claim 200 wherein said alkyl moiety consists  
2 essentially of from 2 to 12 carbon atoms and  $CH_2$  groups optionally are substituted by  
3 groups selected from the group consisting of oxygen, sulfur, and ester groups; provided  
4 that two or more carbon atoms separate said oxygen from said ester groups.

1 202. (New) The mesogens of claim 201 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 9 carbon atoms.

1 203. (New) The mesogens of claim 201 wherein said alkyl moiety consists  
2 essentially of a total of from 2 to 6 carbon atoms.

1 204. (New) The mesogens of claim 199 wherein  $R$  and  $R^3$  are selected from  
2 the group consisting of hydrogen and a methyl group.

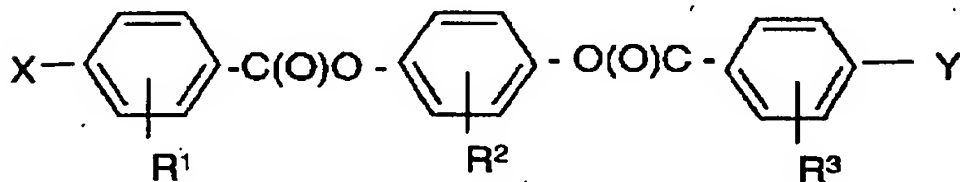
1 205. (New) The mesogens of claim 201 wherein  $R$  and  $R^3$  are selected from  
2 the group consisting of hydrogen and a methyl group.

1 206. (New) The mesogens of claim 199 wherein one or more member selected  
2 from the group consisting of X and Y further consists essentially of spacer group.

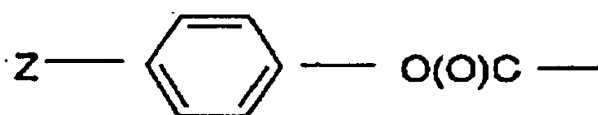
1 207. (New) The mesogens of claim 201 wherein one or more member selected  
2 from the group consisting of X and Y further consists essentially of spacer group.

1 208. (New) The mesogens of claim 204 wherein one or more member selected  
2 from the group consisting of X comprises cinnamoyloxy group.

1 209. (New) Mesogens having the following formula:



2  
3 wherein X and Y independently are selected from the group consisting of spacer groups,  
4 polymerizable groups, and combinations thereof, one or more member selected  
5 from the group consisting of X and Y having the following structure:



6  
7 wherein Z is selected from the group consisting of spacer groups, terminal  
8 functionalities, polymerizable groups, and combinations thereof, said spacer  
9 groups being selected from the group consisting of H-(CH<sub>2</sub>)<sub>n</sub>-O- groups,  
10 Cl(CH<sub>2</sub>)<sub>n</sub>-O- groups, Br(CH<sub>2</sub>)<sub>n</sub>-O- groups, I(CH<sub>2</sub>)<sub>n</sub>-O-, wherein n is from about 2  
11 to about 12 wherein the CH<sub>2</sub> groups independently can be substituted by oxygen,  
12 sulfur, or an ester group; provided that at least 2 carbon atoms separate said  
13 oxygen or said ester group;

14 R<sup>2</sup> is selected from the group consisting of alkyl groups having from about 1 to 6 carbon  
15 atoms and aryl groups; and

16 R<sup>1</sup> and R<sup>3</sup> are selected from groups less bulky than R<sup>2</sup>.

1           210. (New) The mesogens of claim 209 wherein X and Y further consist  
2 essentially of functionalities independently selected from the group consisting of  
3 hydroxyl groups, amino groups, and sulfhydryl groups.

1           211. (New) The mesogens of claim 210 wherein n is from about 2 to 9.

1           212. (New) The mesogens of claim 210 wherein n is from 2 to 6.

1           213. (New) The mesogens of claim 209 wherein said polymerizable groups  
2 have alkyl moiety having polymerizable unsaturated carbon-carbon bond.

1           214. (New) The mesogens of claim 210 wherein said polymerizable groups  
2 have alkyl moiety having polymerizable unsaturated carbon-carbon bond.

1           215. (New) The mesogens of claim 214 wherein said alkyl moiety has from 2  
2 to 9 carbon atoms.

1           216. (New) The mesogens of claim 214 wherein said alkyl moiety has from  
2 from 2 to 6 carbon atoms.

1           217. (New) The mesogens of claim 209 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.

1           218. (New) The mesogens of claim 210 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.

1           219. (New) The mesogens of claim 213 wherein R<sup>2</sup> is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.



1           220. (New) The mesogens of claim 214 wherein  $R^2$  is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.

1           221. (New) The mesogens of claim 216 wherein  $R^2$  is selected from the group  
2 consisting of methyl groups, t-butyl groups, isopropyl groups, secondary butyl groups,  
3 and phenyl groups.

1           222. (New) The mesogens of claim 209 wherein R and  $R^3$  are selected from  
2 the group consisting of hydrogen and methyl group.

1           223. (New) The mesogens of claim 217 wherein R and  $R^3$  are selected from  
2 the group consisting of hydrogen and methyl group.

1           224. (New) The mesogens of claim 220 wherein R and  $R^3$  are selected from  
2 the group consisting of hydrogen and methyl group.

1           225. (New) The mesogens of claim 221 wherein R and  $R^3$  are selected from  
2 the group consisting of hydrogen and methyl group.

1           226. (New) The mesogens of claim 209 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1           227. (New) The mesogens of claim 217 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1           228. (New) The mesogens of claim 222 wherein one or more member selected  
2 from the group consisting of X and Y is cinnamoyloxy group.

1